

IN THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of claims:

1. (Currently Amended) A modified enzyme in which glycine at amino acid 38 in a *L. brevis* or *L. kefir* rec-(R)-alcohol dehydrogenase enzyme is replaced with aspartic acid wherein at least one neutral amino acid of the wildtype enzyme is replaced with at least one acidic amino acid in the coenzyme binding site, and wherein the basic amino acids at the coenzyme binding site of said enzyme are not replaced; wherein the modified enzyme exhibits increased NAD(H) affinity compared to the wildtype *L. brevis* or *L. kefir* rec-(R)-alcohol dehydrogenase enzyme.

Claims 2-5 (Cancelled)

- D) 6. (Original) The modified enzyme of claim 1, which comprises the amino acid sequence of SEQ ID NO:2.

Claim 7 (Cancelled)

8. (Original) An isolated polynucleotide which encodes the modified enzyme of claim 1.

9. (Original) The isolated polynucleotide of claim 8, which comprises the nucleotide sequence of SEQ ID NO:1.

10. (Original) A plasmid vector comprising the isolated polynucleotide of claim 8.

11. (Original) A host cell comprising the isolated polynucleotide of claim 8.

12. (Currently Amended) A method of making the modified enzyme of Claim 1 comprising: replacing a glycine at amino acid 38 in a wildtype *L. brevis* or *L. kefir* rec-(R)-alcohol dehydrogenase enzyme with aspartic acid at least one neutral amino acid in a wildtype enzyme with at least one acidic amino acid in the coenzyme binding site of the

~~enzyme, wherein the basic amino acids at the coenzyme binding site of said enzyme are not replaced;~~ and wherein said modified enzyme exhibits increased NAD(H) affinity compared to an ~~unmodified~~ the wildtype *L. brevis* or *L. kefir* rec-(R)-alcohol dehydrogenase enzyme.

Claims 13-16 (Cancelled)

17. (Original) The method of claim 12, wherein said enzyme comprises the amino acid sequence of SEQ ID NO:2.

Claim 18 (Cancelled)

19. (Currently Amended) A method of making the modified enzyme which has improved NAD(H) affinity comprising culturing the cell of claim 11 8 for a time and under conditions suitable for the expression of the polynucleotide which encodes said enzyme; and collecting the enzyme.

D) 20. (Original) The isolated nucleotide sequences of SEQ ID NO:4 and SEQ ID NO:5.

21. (Original) Sense and antisense polynucleotides which encode TDRHSDVG.

22. (Currently Amended) A method of enantioselective reduction of a organic compound comprising reacting said compound with the modified enzyme of claim 1 and at least one of NAD(H) and NAD+, wherein said organic compound is selected from the group selected from the group consisting of ketones,  $\alpha$ -keto esters,  $\beta$ -keto esters,  $\gamma$ -keto esters, and combinations thereof.

23. (Original) The method of claim 22, which yields a chiral alcohol.

24. (Original) The method of claim 23, wherein said chiral alcohol is an (R)-alcohol.

25. (Original) The method of claim 22, wherein said reacting is with NAD(H).

Claims 26-29 (Cancelled)

30. (Original) The method of claim 22, wherein said enzyme comprises the amino acid sequence of SEQ ID NO:2.

Claim 31 (Cancelled)

32. (Currently Amended) A method of enantioselective oxidation of alcohols

comprising reacting an alcohol comprising reacting a alcohol with the modified enzyme of  
claim 1 and at least one of NAD(H) and NAD+.

33. (Original) The method of claim 32, which yields a chiral alcohol.

34. (Original) The method of claim 33, wherein said chiral alcohol is a (R)-alcohol.

35. (Original) The method of claim 32, wherein said reacting is with NAD(H).

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Claims 36-39 (Cancelled)

40. (Original) The method of claim 32, wherein said enzyme comprises the amino  
acid sequence of SEQ ID NO:2.

Claim 41 (Cancelled)

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